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**THE EFFECT OF ENVIRONMENTAL, SOCIAL GOVERNANCE (ESG)
COMPLIANCE ON THE FINANCIAL PERFORMANCE OF LISTED FIRMS IN
KENYA**

143061

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**Submitted in partial fulfillment of the requirements for the Degree of
Bachelor of Business Science in Financial Engineering at Strathmore University**

**Strathmore Institute of Mathematical Sciences (SIMS)
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January, 2025

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ACKNOWLEDGEMENT

First and foremost, I am deeply grateful to God for granting me the strength, wisdom, and perseverance to complete this research project. I extend my heartfelt appreciation to my parents for their unwavering support, encouragement, and belief in me throughout this journey. I would also like to express my sincere gratitude to my supervisor, Dr. Jackson Idi Mdoe, for his invaluable support and guidance. His insights, feedback, and patience have been crucial in shaping this research. Lastly, I would like to thank Strathmore University for providing the academic foundation and platform that made this research possible.

To everyone who has contributed to this journey in one way or another, thank you.

ABSTRACT

In recent years, firms in Kenya have increasingly incorporated Environmental, Social, and Governance (ESG) disclosures into their annual reports to demonstrate their commitment to sustainability and attract investors. This study examines the impact of ESG compliance on the financial performance of firms listed on the NSE 20 index, using Return on Equity (ROE) as the key metric. Through multivariate regression analysis, the study explores the relationship between ESG compliance and ROE while accounting for factors such as firm size, industry, and market conditions. The findings indicate that ESG compliance has minimal impact on the financial performance of listed firms in Kenya. The study's primary objective was to assess whether ESG-compliant firms outperform non-compliant firms. This was evaluated by comparing the financial performance of firms that had consistently disclosed ESG information versus those that adopted compliance more recently. Results show that early adopters of ESG disclosures, those reporting before the NSE introduced its guidelines, experienced financial losses, while firms that only began compliance in recent years have yet to see any measurable impact on their performance. This research offers valuable insights for investors, policymakers, and corporate managers by shedding light on the financial implications of ESG compliance. It also provides guidance on integrating ESG factors into investment decisions and corporate strategies.

Keywords: ESG compliance, financial performance, return on equity (ROE), listed firms, Kenya, Nairobi Securities Exchange (NSE).

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LIST OF ABBREVIATIONS

ESG: Environmental, Social, Governance

NSE: Nairobi Securities Exchange

CFP: Company Financial Performance

CSR: Corporate Social Responsibility

TBL: Triple Bottom Line

ROE: Return on Equity

ROA: Return on Assets

FiRe: Financial Reporting Award

LSEG: London Stock Exchange Group

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Financial performance refers to a company's performance for a certain period measured by capital adequacy, liquidity, solvency, efficiency, leverage, and profitability. One of the best ways to measure the financial performance of a company is by measuring its ability to manage and control its own resources, (Fatihudin, 2018). Metrics from statements of cash flow, balance sheets, profit-loss and change in equity provide the basis for investors and managers to make decisions. However, with the climate change and sustainability conversation growing louder, the performance of companies is no longer measured by financial metrics only, but investors are now looking to see how sustainable companies they invest in are.

Environmental, Social, Governance (ESG) financing refers to investment in assets and opportunities that are environmentally and socially sustainable. ESG compliance involves social reporting by companies on how they maintain environmental sustainability, social responsibility and have good corporate management practices. It is becoming a consideration of importance to investors who want to invest in companies that are conscious of their impact on stakeholders.

In Kenya, the need for companies to be sustainable was not a major conversation until 2021 when the NSE released its ESG Reporting Guidelines. Prior to this the only law governing environmental and social responsibility of firms in Kenya was the *Environmental Management and Coordination Act (No.8 of 1999)*.

1.2 PROBLEM STATEMENT

ESG has emerged as arguably the most important corporate governance tool in current times. Kenya, just like many developing countries has been quite slow in the uptake of ESG compliance among companies. The Nairobi Securities Exchange (NSE) released its ESG Disclosures Guidance

Manual in 2021. The Manual obligates companies listed on the Nairobi Stock Exchange to transparently report their Environmental, Social and Governance (ESG) performance, following the Global Reporting Initiative (GRI) Standards framework at least once annually and integrate it into their annual reports. As of June 2024, reporting has been voluntary since the NSE has not made ESG compliance a mandatory requirement for listing. (Business Daily,2023) the NSE reported that only 15 out of 65 companies listed on the NSE, had formally adopted ESG reporting as part of their annual reports as of December 2023, meaning only 25% of listed firms were compliant.

(Friede & Bassen, 2015), conducted a review of academic literature in which they analyzed approximately 2,200 empirical studies beginning in 1970 on the relationship between Environmental, Social, Governance (ESG) and Company Financial Performance (CFP). They found that roughly 90% of the analyzed studies find a nonnegative ESG–CFP relation. However, the results indicated that the positive impact differs when considering investment in different asset classes and geographical regions. A majority of the studies that were reviewed were conducted in North America, Europe, Asia, and Australia. This is clear evidence that most existing research on the financial impacts of ESG compliance has been conducted in developed markets, and their findings may not be directly applicable to the Kenyan context due to differences in market dynamics, regulatory environments, and socio-economic conditions.

Agutu & Githira (2023) conducted a very similar study of 23 listed companies on the NSE in which they found that there was a significant relationship between financial performance and sustainability reporting meaning that increased sustainability led to improvements in financial performance. The study, however, did not investigate whether there is a significant difference between the performance of ESG noncompliant firms in comparison to those that are compliant. The main objective of businesses is to maximize profits and minimize costs. Compliance with standards introduces extra costs to companies such as the cost of hiring experts, costs of training staff to incorporate sustainable practices in their operations and costs of getting involved in social and environmental initiatives. This may be one of the reasons most listed firms have not begun reporting as it is an added cost to firms that may not make that much of a difference in their financial performance.

1.3 RESEARCH QUESTIONS

The study aims to answer the following questions:

1. What is the impact of ESG compliance on the financial performance of listed companies in Kenya?
2. What are the key differences in financial performance metrics between ESG compliant and noncompliant companies in Kenya?

1.4 RESEARCH OBJECTIVES

The main objective is to assess the impact of ESG compliance on the financial performance of companies in Kenya. The study aims to:

1. Establish the impact of ESG (Environmental, Social, Governance) on the financial performance of listed companies in Kenya.
2. Compare financial performance metrics between ESG compliant and noncompliant companies in Kenya.

1.5 SIGNIFICANCE OF THE RESEARCH

This research study is significant as it seeks to provide empirical evidence that could serve as an incentive for non-compliant firms to adopt ESG practices. It extends existing research by looking specifically at a developing country context, and potentially contributes to deepening understanding of how ESG compliance impacts firms in the developing South, particularly Africa. It also extends current knowledge by evaluating metrics not previously empirically tested for Kenya on the ESG agenda.

CHAPTER TWO

LITERATURE REVIEW

This chapter aims to review existing literature regarding the theories that motivate sustainability reporting measures such as ESG. It highlights approaches other researchers have used to establish the significance of ESG with regards to financial performance of listed firms in various economic contexts beyond Kenya. It also outlines the literature findings on ESG compliance, and its impact on financial performance of firms.

2.1 THEORETICAL LITERATURE REVIEW

This section explores the theoretical foundations underpinning this study, a review of these theories provides a framework for understanding how ESG disclosure may influence a firm's return on equity (ROE).

2.1.1. Corporate Social Responsibility

It was initially assumed that governments solely had the responsibility of ensuring social welfare. Friedman (1970) believed that the only obligation a business had was to increase its profits. Similar sentiments were shared by (Greenfield, 2004), who believed that corporations' only responsibility was to make money and adhere to relevant rules. However, over time research has acknowledged that societal and environmental needs are too vast for governments alone to cater to all of them hence the need for businesses to get involved. Bowen (1953), first coined the term "Corporate Social Responsibility" in his publication *Social Responsibilities of the Businessman*. Bowen argued that businesses have an obligation to pursue policies and make decisions that benefit society, not just their shareholders. The stakeholder theory builds on this by arguing that the better a firm manages its relationships with its stakeholders, the more successful it will be over time (Barnett & Salomon, 2012). Emphasis was placed on the fact that businesses should consider the social, ethical, and environmental impacts of their actions. The concept of Corporate Social Responsibility is relevant to this study as ESG reporting requires companies to account for their actions beyond financial measures.

2.1.2 Triple Bottom Line Theory

The “triple bottom line” theory, commonly abbreviated as “TBL” or “3BL”, was introduced by John Elkington in 1994. It serves as one of the main theories upon which Corporate Social Responsibility (CSR) is founded. The concept ensures that organizations not only look at generating economic value but also incorporate social and environmental considerations into their operations by focusing on 3Ps – Profit, People and Planet. Žak (2015), coupled this with the assumption that as much as companies generate value, they are also innately involved in activities that destroy certain societal and environmental values. There is no universal measure for the three Ps of the TBL accounting approach, profit is measured in currency, leaving the question of how to measure the firm’s performance with regards to people and planet. This issue can be viewed as a strength as it allows users to adapt the model to their relevant context (Slaper & Hall, 2011). This is relevant to the current study as ESG is founded on similar pillars and does not have a fixed methodology by which it is measured. This allows the researcher to capture the necessary aspects of Environmental, Social and Governance that are relevant to their study in their models.

2.1.3 Stakeholder Theory

A stakeholder is any group or individual that is affected by an organization’s actions or activities. In his publication, Freeman (1984), expanded the corporate governance perspective beyond shareholders to include various stakeholders such as employees, customers, suppliers, regulators, and communities. This broader view of corporate responsibility challenged the traditional focus on shareholder primacy, suggesting that firms should consider the interests of all stakeholders in their decision-making processes. Essentially the theory implies that firms that actively consider stakeholder interests beyond their financial beneficiaries enhance their reputation, secure customer loyalty, and improve employee satisfaction, (Harrison, Bosse & Phillips, 2010). In conclusion, stakeholder theory provides a more holistic approach to corporate governance, where firms consider not only their shareholders but also their broader social and environmental impacts.

2.1.4 Legitimacy Theory

Legitimacy Theory as proposed by Suchman (1995) suggested that firms must meet certain expectations from society in order to gain stakeholder approval and confidence. The theory emphasized that businesses operate within a social framework where legitimacy is crucial for long-

term success.. Expanding on this, (Gehan & Naser ,2015),found that firms that voluntarily disclosed ESG-related information, signaled their commitment to corporate responsibility and social expectations, which lead to improved financial performance. Similarly, Newman, Rand, Tarp,& Trifkovic (2018), posited that it was essential for firms to adopt governance practices in alignment with the principles of corporate social responsibility in order to gain legitimacy in the eyes of stakeholders and society at large. They argued that failing to integrate responsible governance structures could lead to reputational risks and a potential loss of investor confidence. Furthermore, in their study on how sustainable practices can drive financial outperformance , (Clark, Feiner, & Viehs, 2015) gathered empirical evidence that supported the notion that companies with strong sustainability practices demonstrated better operational performance. This in turn had a positive influence on investor trust and ultimately translated to an increase in cashflows. These studies clearly highlight the importance of adopting sustainable practices, responsible governance and transparent ESG disclosures in enhancing credibility among investors and achieving long-term financial success.

2.2 EMPIRICAL LITERATURE REVIEW

In this study, financial performance served as the dependent variable, making it essential to review existing research that has evaluated the effectiveness of various financial performance measures used by firms and scholars to determine the most appropriate metric for this analysis.

Organizations measure performance to identify success, assess whether they are meeting customer requirements, identify problems so they can make improvements where necessary and most importantly to aid decision making (Parker, 2000). This performance is documented in financial statements and reports such as the balance sheets, income statements and cashflow statements which are usually consolidated in an annual financial report.

Over time researchers have debated what measure best captures the financial performance of a business. Performance can be evaluated through profitability measures such as net income, operating income, return on assets (ROA) or return on equity (ROE). It can also be assessed by assessing liquidity and solvency ratios. Another approach is to measure financial performance in terms of market valuation through stock performance measures such as earnings per share (EPS),

price-to-earnings (P/E) ratio. Bacidore (1997) suggested that Economic Value Added (EVA) is the best measure of financial performance. On the one hand, it has a strong correlation with changes in shareholder wealth and, on the other hand, it is immune to all the unpredictability and "noise" that comes with a company's stock price.

Kaplan & Norton (1992) introduced the concept of the Balanced Scorecard (BSC) as a performance measurement for companies whose intangible assets played a significant role in value creation. Kaplan (2009) expanded the original study, by detailing the conceptual framework of the Balanced Scorecard. It maintains financial metrics as the ultimate measure for performance but compliments this by measuring additional perspectives as drivers for increased value – customer satisfaction, internal processes, learning and growth. Performance evaluation must be done through a multidimensional system that addresses both financial and non-financial indicators to mitigate the limitations of each indicator, (Diana, 2020). All things considered, investors still consider profitability to be the most important indicator of a company's success, as it directly reflects its ability to generate value and sustain operations in a competitive market. The understanding of these measures is important for the current study as financial performance will serve as the dependent variable against which the effects of ESG will be analyzed.

A look into how other researchers in the same field have analyzed the relationship between ESG and corporate financial performance and a critical assessment of the techniques applied for analysis provides a solid foundation for this study.

Velte (2016) conducted a study to show the impact of ESG on financial performance using a sample of companies listed on the German Prime Standard for the business years 2010 to 2014. The analysis involved a multivariate regression analysis and a correlation analysis to examine the relationship between ESG performance and financial performance measures such as Return on Assets (ROA) and Tobin's Q which is the ratio between a physical asset's market value and its replacement value. The regression results indicated a positive and significant relationship between total ESG performance and financial performance with ROA as an accounting-based measure of financial performance. The impact of the governance score (GS) on ROA was found to be stronger

than the other two components. However, the relationship with Tobin's Q as a market-based measure of financial performance was nonsignificant.

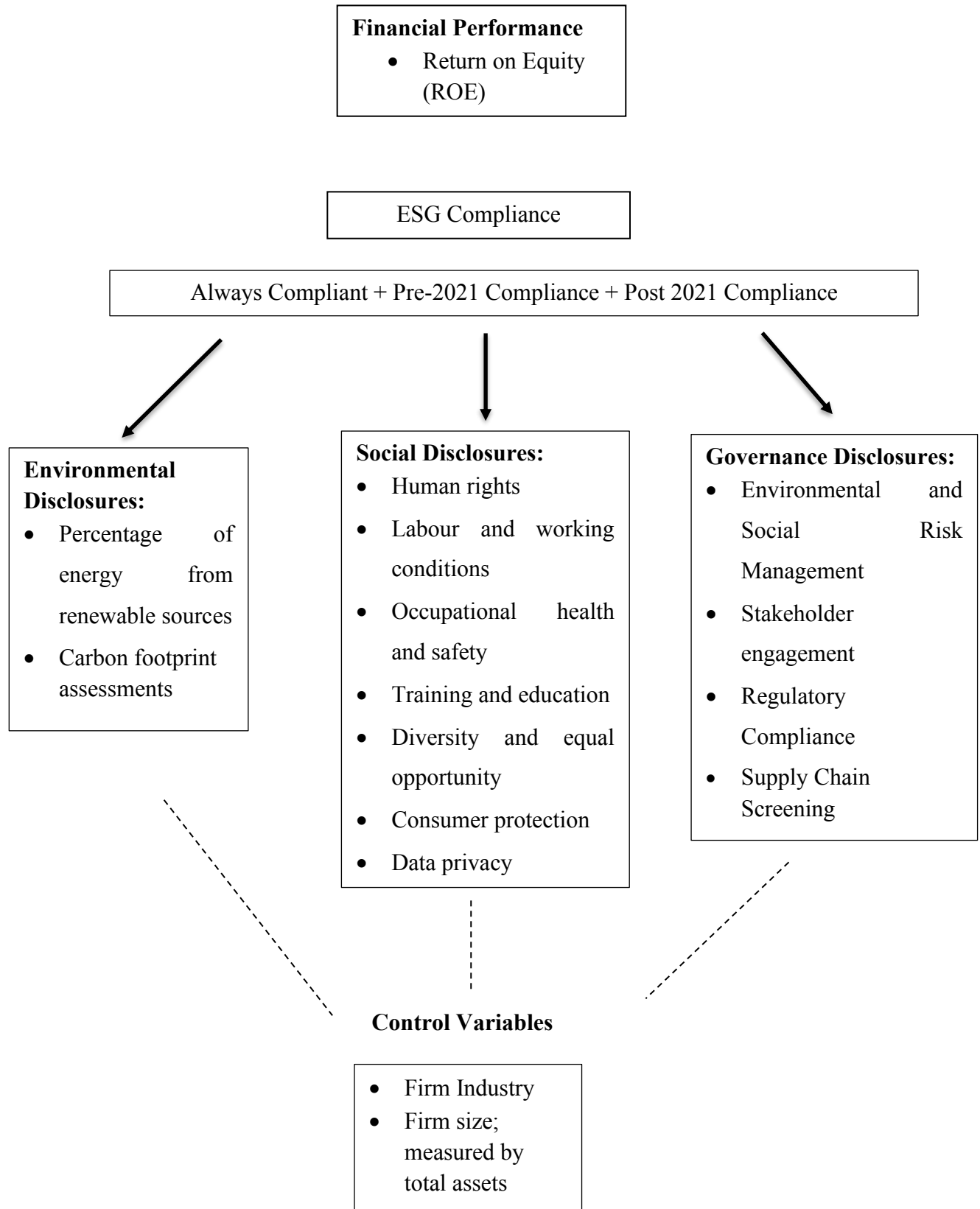
A similar study was conducted by (Dzomonda & Fatoki, 2020) in which a longitudinal research design was adopted where the researchers collected panel data from 2011–2018. The sample constituted of 32 firms listed on the Financial Times Stock Exchange (FTSE) and the Johannesburg Stock Exchange (JSE) Responsible Investment Index in South Africa. The researchers employed the panel regression analysis model to analyze the data. Specifically, the Feasible Generalized Least Squares regression model was used in this study. Financial performance was treated as the dependent variable as measured by earnings per share and share price. The findings indicated that at a 95% confidence level, carbon emission reduction was positively and significantly related to earnings per share and share price. The findings further exhibited that environmental compliance was positively related to earnings per share and share price.

Kim and Li (2021) analyzed 172,437 observations from 4,708 firms between 1991 and 2013 using data from S&P Capital IQ—Compustat and MSCI ESG Stats databases. They examined the impact of environmental, social, and governance (ESG) scores on corporate profitability (ROA) and credit risk (S&P ratings) through multivariate regression models. The study found a positive relationship between ESG factors and profitability, with governance having the most significant impact, especially for firms with weak governance. Social and governance scores improved credit ratings. However, the study found environmental scores had a negative effect on credit ratings. This differs from the findings of (Dzomonda & Fatoki, 2020), which established the effect of environmental compliance as positive. This demonstrates how the context of a study and the size of the sample affect the impact of the different ESG components.

Agutu & Githira (2023) conducted a study involving 23 listed financial firms in Kenya. The researcher used ROE as their dependent variable and environmental, social and governance data as independent variables. A non-refined exploratory factor analysis was used to acquire data on the predictor variables through a document check index, and annual reports were the source of data for the response variable. They used descriptive statistics and a Feasible Generalized Least Squares (FGLS) Model to analyze secondary data from 2015 to 2021 on the listed firms. Results from the analysis showed a positive and significant relationship between sustainability reporting and

performance of listed financial firms in Kenya. This study is beneficial to the current study as it indicates that ESG reporting positively impacts performance of listed financial firms in Kenya. However, the study only focused on firms within the finance industry and also fails to show whether there is a significant difference in the performance of ESG compliant and noncompliant listed firms in Kenya. The current study intends to adopt a similar model of analysis, taking ROE as the dependent variable in a multivariate regression model.

2.3 CONCEPTUAL FRAMEWORK



A conceptual framework helps organize the key concepts of a study and their relationships to provide a structured approach to understanding a problem. The framework guides research or analysis by defining variables and illustrating their connections. The conceptual framework adopted is similar to that of Wanjau, B. (2016), where financial performance measured by ROE served as the dependent variable upon which the effects ESG compliance was analyzed. This study examined the impact of ESG compliance on financial performance by assessing whether firms had met the mandatory ESG disclosures outlined by the NSE. In this framework, ESG compliance was measured by a dummy variable where **0** = ESG non-compliance i.e. years when the firm did not meet the mandatory ESG disclosures and **1** = ESG compliance i.e. years when the firm had met the mandatory ESG disclosures.

The mandatory ESG disclosures cover specific governance, economic, social, and environmental topics that must be reported by listed companies in Kenya:

Governance: Environmental and Social Risk Management, Stakeholder Engagement, Regulatory Compliance, and Supply Chain Screening.

Economic: Taxes and Anticorruption.

Social: Human Rights, Labor and Working Conditions, Occupational Health and Safety, Training and Education, Diversity and Equal Opportunity, Consumer Protection, and Data Privacy.

Environment: Environmental Compliance and Emissions (including carbon footprint assessment).

While these disclosures are mandatory, listed companies are encouraged to report additional ESG topics and to disclose their progress toward the Sustainable Development Goals (SDGs). The framework allows for a comparative analysis, examining both the immediate financial impact of mandatory ESG compliance and potential long-term financial benefits related to SDG contributions.

By using ROE as the dependent variable and ESG compliance as the independent variable, this framework facilitated a structured analysis to determine whether firms that adhered to these mandatory ESG guidelines exhibited superior financial performance. Control variables like industry type and total assets helped account for industry-specific practices and firm size. The

framework also supported regression analysis which captured differences between firms that complied with ESG standards before the 2021 guidelines and those that complied afterward.

2.4 OVERVIEW OF LITERATURE

This literature review focused on existing research on the theories and empirical findings related to ESG (Environmental, Social, Governance) compliance and its impact on corporate financial performance.

The theoretical foundations of this study were rooted in theory of Corporate Social Responsibility (CSR), which emphasized that businesses should balance profit generation with societal and environmental considerations. This was emphasized by the Triple Bottom Line (TBL) theory which further supported the concept, by urging companies to consider not only financial profit but also their social and environmental contributions. In addition, the stakeholder theory expanded the corporate governance view beyond shareholders to include employees, customers, and other stakeholders, suggesting that firms that prioritize stakeholder interests enhance their long-term success. Finally, the legitimacy theory posited that businesses must meet societal expectations to gain stakeholder approval and ensure continued success, further supporting the need for transparent ESG disclosures. The main variables of interest from the theoretical literature include environmental impact, social impact and governance practices.

From the empirical research on the link between ESG compliance and financial performance studies consistently highlight that ESG practices can influence a firm's financial outcomes, though the findings vary across different economic contexts. Velte (2016) found a positive relationship between ESG performance and financial metrics like ROA, especially with governance factors, while Dzomonda & Fatoki (2020) demonstrated that carbon emission reduction and environmental compliance positively affected earnings and share prices in South Africa. Kim & Li (2021) reported a positive relationship between ESG scores and profitability, with governance being the most significant determinant, although environmental scores had a negative impact on credit ratings in their sample of U.S. firms. In Kenya, Agutu & Githira (2023) found a positive and significant relationship between sustainability reporting and the performance of financial firms.

The key variables of interest from the empirical literature include financial performance measured using profitability measures such as Return on Equity(ROE) or Return on Assets(ROA) and ESG measures.

These studies support the view that ESG compliance can enhance financial performance, however, none of them have compared ESG-compliant and non-compliant firms within Kenya. This gap in the literature is addressed in the current study, which aims to examine the differential impact of ESG compliance on the ROE of firms listed on the Nairobi Securities Exchange.

CHAPTER THREE

METHODOLOGY

3.1 RESEARCH DESIGN

The study took on a quantitative causal comparative research design, which sought to establish a cause-effect relationship between variables. This research design involves the researcher comparing groups that differed on a particular independent variable to determine their effect on a dependent variable using statistical techniques. In this case, comparing the difference between the financial performance of ESG compliant and non-compliant listed firms. Where ESG compliance is the independent variable and financial performance is the dependent variable. The researcher had no control of which firms fall into the groups of ESG compliant and non-compliant firms, as would be the case with a true experiment, making the method quasi-experimental..

3.2 EMPIRICAL MODEL

To assess the impact of ESG compliance on financial performance measured by Return on Equity, (ROE), the study employed regression analysis. ESG compliance for each firm in the study was represented by a dummy variable, where 1 indicated compliance and 0 represented non-compliance. This binary variable allowed for a clear distinction between compliant and non-compliant years for each firm in the dataset. Compliance status was based on the presence of required ESG disclosures in each firm's annual reports.

The analysis utilized multivariate regression models, the first model had ROE as the dependent variable and ESG compliance as the primary independent variable. This regression aimed to determine whether a statistically significant relationship exists between ESG compliance and financial performance (ROE).

The first multivariate regression model which took on the following shape was best suited to establish the relationship between Return on Equity and ESG compliance in the presence of control variables.

$$ROE_i = \beta_0 + \beta_1(ESGCompliance_i) + \beta_3(FirmSize_i) + \beta_4(FirmSector_i) + \epsilon_i$$

Where:

ROE_i is the Return on Equity for firm i.

ESGCompliance_i is a dummy variable (1 if the firm is ESG-compliant, 0 otherwise).

ControlVariable_Firm Sector is a control variable for firm sector that may impact ROE.

ControlVariable_Firm Size is a control variable for firm size and industry.

β₀ is the intercept.

β₁, β₂ ..., β_n are the coefficients for the respective variables.

ε_i is the residual term.

In the second multivariate regression model, ESG compliance was split into three categories namely: always compliant, pre-2021 compliance and post 2021 compliance. This split allowed the researcher to achieve the second objective of establish the difference in performance between compliant and non-compliant firms by assessing differences in financial performance between firms that adopted sustainability reporting earlier and those that started later.

The second model will divide the ESG compliance variable into three dummy variables to assess the difference in performance as firms moved from non-compliance to compliance over time.

$$ROE_i = \beta_0 + \beta_1(Pre2021\ Compliance) + \beta_2(Post2021\ Compliance) + \beta_3(Firm\ Sector_i) + \beta_4(Firm\ Size_i) + \epsilon_i$$

Where:

ROE_i is the Return on Equity for firm i.

Pre2021 Compliance is the dummy variable representing firms that started reporting on their ESG practices after 2016 but prior to the release of the NSE ESG Disclosures Manual in 2021.

Post2021 Compliance is the dummy variable representing firms that started reporting on their ESG practices only after the release of the NSE ESG Disclosures Manual in 2021.

ControlVariable_Firm Sector is a control variable for firm sector that may impact ROE.

ControlVariable_Firm Size is a control variable for firm size that may impact ROE,

β₀ is the intercept, which represents the coefficient for firms that were ESG compliant throughout the period 2016 to 2023.

β₁, β₂, β₃ and β₄ are the coefficients for the respective variables.

ϵ_i is the residual term.

3.2.1 Definition and measurement of variables

Table 3.1: Definition and measurement of variables

VARIABLE NAME	DEFINITION	MEASUREMENT
Return on Equity	Return on Equity (ROE) is a financial metric that measures a company's profitability by indicating how much profit it generates with the money shareholders have invested.	$ROE = \frac{\text{Annual Net Income}}{\text{Shareholder's Equity}}$
ESG Compliance	ESG compliance means a firm has included disclosures adheres to environmental, social and governance standards, implementing practices that promote sustainability, social responsibility, and ethical governance. Firms are considered non-compliant if they fail to meet these standards or engage in harmful practices.	Firms have made all mandatory disclosures outlined in the NSE ESG Disclosures Manual 2021 as part of their integrated annual reports. Where a firm has not made all mandatory disclosures then it is considered non-compliant for that given year.
Always Compliant	These are firms that have been ESG compliant throughout the period under study (2016 to 2023)	Dummy variable (0 or 1)
Pre-2021 Compliance	Firms that were initially non-compliant at the start of the study period but began to report on ESG practices before the release of the disclosure guidelines in 2021	Dummy variable (0 or 1)

Post-2021 Compliance	Firms that only became compliant after the release of the NSE's ESG Disclosures Manual in 2021	Dummy variable (0 or 1)
Environment Metrics	Environmental metrics assess a firm's impact on the planet.	Environmental Mandatory Disclosures in the NSE ESG Disclosure Manual 2021: • Percentage of energy from renewable sources • Carbon footprint assessments
Social Metrics	Social metrics evaluate a company's impact on people and society.	Social Mandatory Disclosures in the NSE ESG Disclosure Manual 2021: • Human rights • Labour and working conditions • Occupational health and safety • Training and education • Diversity and equal opportunity • Consumer protection • Data privacy
Governance Metrics	Governance metrics measure the quality of a company's leadership, ethical practices, transparency, and accountability.	Governance Mandatory Disclosures in the NSE ESG Disclosure Manual 2021: • Environmental and Social Risk Management • Stakeholder engagement • Regulatory Compliance

		• Supply Chain Screening
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3.3 POPULATION AND SAMPLING

The population for this study consisted of all 65 listed firms on the NSE, which cut across multiple sectors: banking, investment services, commerce, energy, construction, manufacturing and telecommunication. The research sample comprised firms that appeared frequently on the NSE 20 Index from 2016 to 2023. Sampling is the process of selecting a subset of individuals from a population with the aim of estimating characteristics of the entire population. According to Saldanha & Thompson (2002), a good sample should reflect similar essential characteristics to its parent population. Purposive sampling was used to select the specific firms.

Companies included in the index are selected based on their market performance, meeting criteria such as having their primary listing on the Nairobi Securities Exchange, maintaining at least 20% of their shares publicly traded, being listed for at least one year, having a minimum market capitalization of Ksh1 billion, and ideally being "blue-chip" firms with strong profitability and dividend records. These firms' strong financial data practices made them a great sample to represent the overall performance and sustainability practices of the broader market.

The seven-year period from 2016 to 2023 enabled analysis of data from pre-COVID years 2016 to 2019, the pandemic years 2020 and 2021 and the post-pandemic recovery period 2022 and 2023. Extending the study's duration allowed for observation of longer-term trends and captured more pre-COVID data which helped reduce noise from the short-term data fluctuations seen during the pandemic. This study period allowed for observation of trends and changes in the potential impact of ESG reporting over varying economic conditions, while also minimizing distortion in findings caused by anomalous economic conditions because of the COVID-19 pandemic.

3.4 DATA ANALYSIS

Following collection, data was cleaned, prepared, and checked for completeness, consistency, and accuracy to prevent errors, biases, or any inconsistencies from affecting the analysis. Any missing data points were identified and addressed using the relevant techniques. Furthermore, the data was

checked for extreme values that could have distorted the analysis and scaling techniques were applied accordingly. Finally, all data was organized in an Excel sheet ready for analysis. The data was then analyzed using both descriptive and inferential statistics.

3.4.1 Descriptive Statistics

Descriptive statistics are a fundamental prerequisite for inferential statistics, it is important for the researcher to be familiar with the different variables in a dataset before using them to infer conclusions, (Kaur, Stoltzfus, & Yellapu, 2018). Descriptive statistics were used to summarize the ESG and financial performance data by calculating the means, medians, standard deviations of financial metrics such as ROE and the [ESG compliance](#). The analysis examined the shape of the data, checking for skewness, kurtosis, and normality in the data.

3.4.2 Regression Analysis

Regression analysis sufficed as an analytical tool to achieve both of the study's objectives of establishing the relationship between ESG compliance and financial performance in listed firms and differences in performance between compliant and non-compliant firms. Sykes, A. O. (1993), defined regression analysis as a statistical tool for the investigation of relationships between different factors known as dependent and independent variables and seeks to establish the significance of these relationships.

The first multivariate regression model helped determine whether a statistically significant relationship existed between ESG compliance and financial performance (ROE). The second multivariate regression model between Return on Equity and the time at which different firms became compliant was used to understand the difference in performance of firms based on their compliance status.

ESG compliance in the second model was split into three categories namely: always compliant, pre-2021 compliance and post 2021 compliance. This split allowed the researcher to achieve the second objective of assessing differences in financial performance between firms that adopted sustainability reporting earlier and those that started later. However, using all the dummy variables in the same regression model was not feasible due to the dummy variable trap.

Dummy Variable Trap

When using dummy variables in a regression model there is the risk of introducing multicollinearity into the regression model since each category of the ESG Compliance variable is represented by a separate dummy variable leading to high correlation between these variables. This means that the presence of one variable can be perfectly predicted by the absence of others.

$$D1 + D2 + D3 = 1$$

Where:

D1= Always Compliant Firms

D2= Pre-2021 Compliant Firms

D3=Post-2021 Compliant Firms

In addition to multicollinearity the dummy variable trap also introduces redundancy between the intercept (β_0) and the dummy variables. The sum of the dummy variables can perfectly predict the intercept because in statistical software the data matrix presents the intercept as a column of ones. In order to avoid the dummy variable trap one dummy variable must be omitted from the model and will serve as the reference category. In this case the model will omit the always compliant group and use it as the baseline reference category.

3.5 DATA SOURCES

The study will use quantitative data for the dependent variable under study i.e. financial performance data. While qualitative data on the necessary sustainability disclosures will be used to assess ESG compliance. Secondary data on the variables shall be drawn from the annual financial reports and sustainability reports of the firms under study.

Financial performance serves as the dependent variable in assessing the impact of ESG compliance. This data is derived from the annual financial reports which are released by firms and can be found on their various websites or on the Nairobi Stock Exchange official website. Key financial performance metrics include profitability, leverage, and solvency. For the purpose of this study the metric of focus will be profitability. This will be measured using Return on Equity which

indicates profitability relative to shareholder's equity; this metric holds more significance than ROA for listed firms since a majority of their shareholding is among public investors. Financial data from the top listed firms is generally reliable due to their high auditing standard, most of these firms have been recipients of the Financial Reporting (FiRe) Awards which is East Africa's most prestigious financial reporting award.

ESG compliance will serve as the independent variable and can be derived from firms' sustainability reports. Sustainability reports will provide information about environmental activities such as carbon emissions, energy use, waste management, and water conservation. Data on social efforts, such as community service, diversity, and employee relations. In addition, these reports will also provide information on governance matters such as board composition, executive salaries, transparency, and ethical procedures.

The data shall be collected using systematic document analysis and extraction techniques to ensure comprehensive and accurate gathering. For financial performance data the primary method shall be document checks where relevant financial statements are reviewed and metrics that allow for calculation of ROE are captured using Microsoft Excel. For the ESG data, content analysis will be employed where ESG related information is systematically identified and firms allocated an appropriate dummy variable for each year of compliance.

In summary, the methodology employs regression analysis to explore the relationship between ESG compliance and financial performance in listed firms, specifically focusing on Return on Equity (ROE). The use of a multivariate regression model ensures that the study accounts for potential confounding variables and provides a comprehensive analysis of the determinants of financial performance for listed firms.

CHAPTER 4

DATA ANALYSIS

This chapter presents the findings from the analysis of data on the top 20 listed firms on the Nairobi Securities Exchange (NSE) over an eight-year period from the 2016 to 2023. The aim of the analysis was to establish the impact of firms' compliance with the NSE's ESG Disclosure Guidelines on their financial performance and assess whether there was a significant difference in the performance of compliant and non-compliant firms. The chapter discusses the methods used to conduct the analysis, the key findings, and their significance in relation to the research questions.

4.1 DESCRIPTIVE STATISTICS

This section looks into the variables, frequency, central tendency, variations and ranges of the data used to conduct this analysis. Generating descriptive statistics is the first step when conducting the data analysis and should always be done before conducting any sort of inferential statistical analysis. This aims to assess whether the data has any outliers, missing observations or errors and allows the researcher to understand the shape of the data before conducting further analysis. The first set of statistics are summarized in Table 4.1.

Table 4.1: Summary of descriptive statistics of the variables used in the study

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	160	.168	.233	-.534	2.186
ESG Compliance	160	.787	.41	0	1
Firm Sector	160	2.8	1.971	1	7
Firm Size	160	4.161	4.755	26928523	2.171e+09
Pre- 2021 Compliance	160	.25	.434	0	1
Post-2021 Compliance	160	.15	.358	0	1
Always Compliant	160	.55	.499	0	1

Table 4.1 shows the summary statistics of the variables used to understand the relationship between ESG compliance and financial performance measured by Return on Equity (ROE). The dataset was made up of 160 firm-year observations, representing the financial performance of 20 listed firms over an eight-year period (2016-2023). The dependent variable ROE, which is the ratio of net income and shareholder's equity, had a mean return of 0.1681, indicating that, on average, firms achieve an ROE of 16.81%. The same variable had a standard deviation of 0.2332, with some firms significantly outperforming or underperforming the average. The minimum ROE in the dataset was -0.5339, indicating that some firms underperformed the average by 53.39% and experienced losses or extremely poor financial performance. Meanwhile, the maximum ROE was 2.1857, indicating that some firms exceptionally outperformed the average with a return exceeding 218%. These statistics underscore the variation in ROE among firms, with a wide range of financial outcomes observed across various firms and years.

The table also highlights the main independent variable which is the ESG compliance dummy variable assigned to each firm for every year from 2016 to 2023 where 1 indicated compliance and 0 indicated non-compliance. The variable had a mean of 0.7875, indicating that 78.75% of the observations represented firms that were ESG compliant in specific years. The standard deviation of 0.4104 reflects moderate variation in compliance status across the dataset. Being a dummy variable the minimum value of 0 signifies that some firms were not ESG compliant in certain years, while the maximum value of 1 indicates full ESG compliance in other cases. Overall, the data revealed that a significant majority of firm-year observations, nearly 79%, were ESG compliant.

In addition to the dependent and main independent variable the dataset also included two control variables namely firm size and firm sectors. The first control variable on firm size was measured by total assets due to a lack of adequate and accurate publicly available data on the market capitalization value of the firms. The mean total asset value across the dataset was 416 million units of currency, and the standard deviation was 475 million units of currency which indicated significant variation in firm sizes, as some firms were much larger than others. The minimum value of 26.9 million reflected the smallest firm by way of total assets, while the maximum value of 2.17 billion represented the largest firm in the dataset. Overall, the dataset encompassed a wide range of firm sizes, with considerable variation in total assets.

Lastly, the second control variable, firm sector, was included to explain any influence brought about in the model as a result of industry-specific factors since the firms all operate in different sectors of the economy. Firm sector was a categorical variable that was encoded to allow for efficient analysis. The sectors were assigned numbers from 1 to 7: 1 = Banking, 2 = Construction and Allied, 3 = Energy and Petroleum, 4 = Insurance, 5 = Investment, 6 = Manufacturing and Allied, 7 = Telecommunication and Allied. The variable displayed a mean sector code of 2.8, suggesting that the sectors are distributed with a slight skew towards lower sector codes. The standard deviation of 1.971 indicated moderate variation in the sectors represented. The minimum value of 1 reflected the sector with the smallest numerical code, while the maximum value of 7 represented the sector with the largest numerical code. Overall, the dataset included firms from seven sectors, with a distribution that is generally even but slightly skewed towards the lower sector codes.

The second objective of the study was to establish the difference in performance of compliant and non-compliant firms. For the sample under study this difference was observed by assessing the different effects that earlier or later compliance had on financial performance. All firms within the dataset had been compliant for at least one year within the 8-year period for which the study was conducted. As a result of this, the ESG compliance variable was split into three groups so as to analyze the difference in the financial performance of firms based on the time at which they began compliance. The first group consisted of firms which had always been compliant, second was those that became compliant later on in the study window i.e. after 2016 but before the NSE released its guidelines in 2021 and the last group comprised those who started complying only after the NSE ESG Disclosures Manual was released in 2021.

The statistics on the three groups, which would be used to achieve the study's second objective, were also included in Table 4.1. The variable always compliant reflected the ESG compliance status of firms that were compliant throughout the period under study (2016-2023). The dummy variable which assigns a value of 1 to the firms that were compliant throughout the period and 0 to all other firms that started compliance after 2016, exhibited a mean of 0.55, indicating that, on average, 55% of the firms in the sample were consistently compliant with ESG standards during this period. The standard deviation of 0.4991 suggested substantial variation in compliance

behavior, with some firms maintaining full compliance throughout, while others did not. The minimum value of 0 indicates that certain firms were never compliant with ESG requirements until after 2016, whereas the maximum value of 1 highlights that other firms adhered to ESG principles consistently throughout the period. This variation underscored the diverse approaches to ESG compliance among firms in the sample.

Secondly, the pre-2021 compliance dummy variable which represents the second group of firms that started compliance before 2021 but after 2016, had a mean value of 0.25, suggesting that only 25% of firms in the sample were compliant with ESG standards prior to 2021. The standard deviation of 0.4344 indicated considerable variation in the compliance status of firms, reflecting a mix of behaviors where some firms adhered to ESG principles, while others did not. The minimum value of 0 indicated that certain firms were entirely non-compliant before 2021, while the maximum value of 1 signified that other firms were fully compliant during this period. This variability highlights the differing levels of commitment to ESG practices among firms before the release of disclosure guidelines in 2021.

Finally, the variable post-2021 compliant reflected the ESG compliance status of firms that only began complying after 2021. This had a mean value of 0.15, indicating that only 15% of the firms in the sample were compliant with ESG standards following this period, with a standard deviation of 0.3582. The minimum value of 0 suggested that certain firms did not adhere to ESG principles after 2021, while the maximum value of 1 demonstrated that some firms were fully compliant with ESG standards during this time.

4.2 DIAGNOSTIC CHECKS

Daoud, J. I.(2017), regression analysis is built on a set of critical assumptions that ensure the reliability and validity of the model. These assumptions include the absence of multicollinearity, which ensures that independent variables are not excessively correlated; homoscedasticity, which requires the variance of errors to remain constant across all levels of the independent variables; linearity, which assumes a linear relationship between the dependent and independent variables; and the absence of autocorrelation, where error terms are not systematically related over time or observations. Violating any of these assumptions undermines the integrity of the model, leading

to biased or inefficient estimates of population parameters. As a result, the model may no longer provide accurate predictions or insights, making it unsuitable for reliable analysis and decision-making.

4.2.1 Linearity

Linearity was assessed using scatter plots where separate scatter plots were generated between ROE and the different independent variables. All variables except firm size were linear. Furthermore, a Shapiro Wilk test was used to assess for normality and the results of the test indicated that the residuals are significantly non-normal. The test statistic ($W = 0.63153$) was far from 1, and the p-value (0.00000) was also less than the common significance level of 0.05. This suggested that the residuals did not follow a normal distribution, which violates one of the key assumptions of linear regression. In addition to this the firm size variable had significant outliers with some firms having total assets as low as 26.9 million while the largest had 2.17 billion.

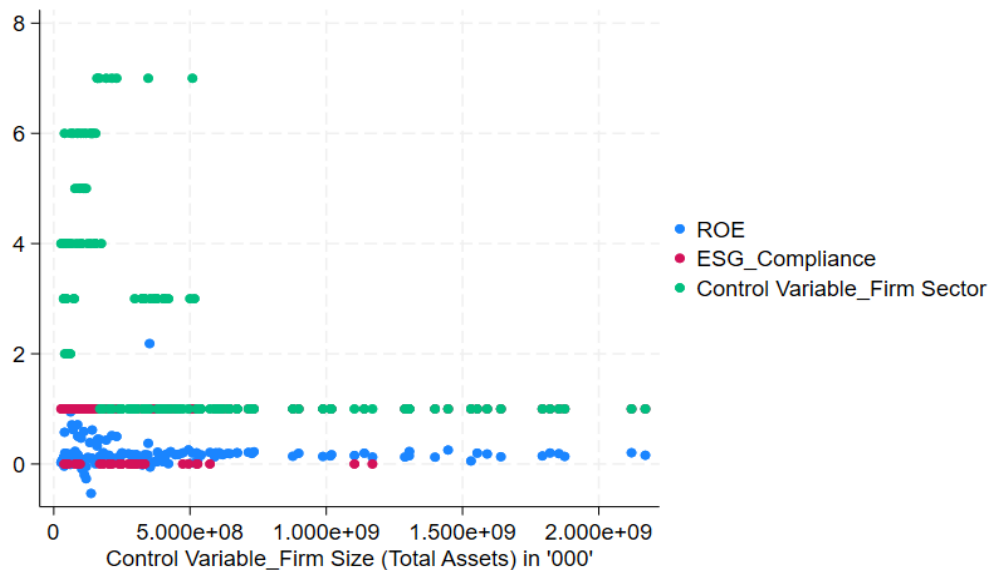


Figure 1: Linearity Scatterplot for Firm Size against other variables

4.2.2 Test for multicollinearity

Multicollinearity appears when two or more independent variables in a regression model are correlated. a little bit of multicollinearity might not cause big problem but when it is moderate or it can affect the reliability of the model's estimates. A summary of the VIF values of the variables that will be used in the models can be seen in Table 4.2.

Table 4.2: Multicollinearity in Regression 1

	VIF	1/VIF
Firm Sector	1.631	.613
Log Total Assets	1.535	.651
ESG Compliance	1.092	.916
Mean VIF	1.42	.

The VIF values in the first regression model are all less than 5 which means that there is low correlation among the independent variables. The firm sector variable had a VIF of 1.631, firm size VIF was 1.535 and ESG compliance had a VIF of 1.092. These values indicate that there is very low multicollinearity in the model, the necessary assumptions for a model to be reliable.

Table 4.3: Multicollinearity in Regression 2

	VIF	1/VIF
Firm Sector	1.784	.56
Log of Total assets	1.522	.657
Post-2021 Compliant	1.338	.748
Pre-2021 Compliance	1.15	.87
Mean VIF	1.448	.

Similarly, the second regression model also displayed minimal multicollinearity among its independent variables with all of them having VIFs well below 5. This is a good sign that both regression models produced reliable outputs.

4.2.3 Homoskedasticity/ heteroskedasticity

Astivia & Zumbo (2019), heteroskedasticity refers to the condition in which the variance of the error terms in a regression model is not constant across observations. This violates one of the key assumptions of ordinary least squares (OLS) regression, potentially leading to inefficient estimates

and invalid hypothesis tests. A Breusch-Pagan/ Cook-Weisberg test was used to check for heteroskedasticity in both models. The test results are based on the following null hypothesis:

Null Hypothesis (H₀): The error terms have constant variance.

Alternative Hypothesis (H_a): The error terms have non – constant variance.

The first model's Breusch-Pagan test had a p-value of 0.9476 is greater than the common significance level of 0.05, as a result we fail to reject the null hypothesis. This means there is no strong evidence of heteroskedasticity. The second model had a p-value of 0.5532 which was also much greater than the standard significance level of 0.05. Similarly, we fail to reject the null hypothesis. For both models there is no heteroskedasticity.

Evidently from these checks the raw total assets data was introducing multiple issues to the model. In order to remedy these issues, the firm size variable was log transformed to ensure normality as it was the only variable that did not have a linear relationship with ROE.

4.3 EMPIRICAL RESULTS

This section presents the study findings thematically based on the objectives. Having established that the regression models meet the necessary assumptions, the next section delves into the core analysis of the relationship between ESG compliance and financial performance.

4.3.1 Relationship ESG Compliance on the financial performance of listed firms in Kenya

The first objective of the study was to establish the impact that ESG compliance had on the financial performance of the top 20 listed firms on the NSE. To achieve this objective a multivariate regression analysis was ran, with ROE as the independent variable, ESG compliance dummy variable served as the main independent variable while firm size and firm sector were also included as control variables. The model was run after the necessary diagnostic checks had been conducted and the outputs are as seen in Table 4.4.

Table 4.4: Regression 1 output from Stata

VARIABLES	(1) ROE
ESG Compliance	-0.00744 (0.0464)
Firm Sector	0.0310*** (0.0118)
Log of Total Assets	0.0391** (0.0197)
Constant	-0.665* (0.395)
Observations	160
R-squared	0.046
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	

F(3, 156)=2.52 , Prob>F = 0.0601 , R-squared =0.0462 , Adj R-squared =0.0279 , Root MSE =0.2295

The dataset comprised 160 observations, and the F-statistic, calculated as $F(3, 156) = 2.52$, tested whether the independent variables collectively explained significant variation in ROE. The model's overall p-value of 0.0601 indicated that the model as a whole was statistically significant at the 10% level, which meant that the independent variables collectively explained some of the variation in ROE. The R-squared value of 0.0462 suggested that only 4.62% of the variation in ROE was explained by the independent variables. Similarly, the adjusted R-squared, which accounted for the number of predictors, remained low at 0.0279, meaning the model only explained 2.79% of the variation in ROE. The root mean squared error (Root MSE) was 0.2295, representing the standard deviation of the residuals and providing an estimate of the average error magnitude in the model.

The ESG compliance dummy variable had a coefficient of -0.0074, indicating that ESG-compliant firms were associated with a decrease of 0.74 percentage points in ROE compared to non-compliant firms, holding other factors constant. However, the p-value of 0.873 exceeded the 0.05

threshold, rendering this relationship statistically insignificant and suggesting no meaningful association between ESG compliance and ROE in this model. Additionally, the 95% confidence interval for the coefficient, ranging from -0.0992 to 0.0843, included zero, further confirming the absence of a significant effect. These findings implied that ESG compliance did not have a discernible impact on ROE within the context of this model.

The control variable for firm size, log-transformed total assets, had a coefficient of 0.0391, suggesting a positive effect of firm size on ROE. With a p-value of 0.049, this relationship was statistically significant at the 5% level, indicating that firm size had a meaningful impact on ROE within this model. Additionally, the 95% confidence interval ranged from 0.0002 to 0.0780. These results highlighted that firm size played a notable role in explaining variations in ROE in this analysis.

From the analysis, the firm sector variable had a coefficient of 0.0257, which indicated that a unit increase in the encoded sector variable was associated with an increase of 2.57 percentage points in ROE, holding other factors constant. The p-value of 0.010 confirmed that this relationship was statistically significant at the 5% level, demonstrating that the firm sector had a meaningful positive effect on ROE. Furthermore, the 95% confidence interval for the coefficient ranged from 0.0076 to 0.0543, which did not include zero, providing additional evidence of the significance of this effect. These findings suggested that the firm sector was an important factor in explaining variations in ROE.

Finally, the constant term had a coefficient of -0.6649, implying that when all predictors were zero, the expected ROE was negative. The p-value of 0.094 indicated that this constant term was marginally significant at the 5% level, suggesting that the baseline ROE was not significantly different from zero.

4.3.2 Difference in the performance of early and late compliance

The second objective aimed to establish the difference in financial performance of firms that were always compliant and those that picked up compliance later on. To do this the ESG compliance variable was divided into three distinct groups: always compliant, pre-2021 compliance and post

2021 compliance all being dummy variables. However, to avoid the dummy variable trap, the regression only included the pre-2021 and post-2021 compliance variables and took always compliant as the reference category that is explained by the β_0 constant coefficient. The results for this second regression are in Table 4.5.

Table 4.5: Regression 2 output from Stata

VARIABLES	(1) ROE
Pre-2021 Compliance	-0.0856** (0.0420)
Post-2021_compliant	0.0155 (0.0581)
Firm Sector	0.0313** (0.0122)
Log of Total Assets	0.0438** (0.0193)
Constant	-0.738* (0.393)
Observations	160
R-squared	0.077

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

F (4,155) = 3.22, Prob>F= 0.0142, R-squared = 0.0768, Adj R-squared = 0.0530, Root MSE = 0.22696

The second regression model was estimated using the same dataset, which comprised 160 observations, focusing specifically on the different ESG compliance timings and the difference in their impact on financial performance. The F-statistic, $F(4,155) = 3.22$, with a p-value of 0.0142, confirmed that the model was statistically significant at the 5% level. This indicated that the independent variables, when considered collectively, exhibited a statistically significant relationship with ROE. However, the R-squared value of 0.0768 suggested that only 7.68% of the variance in ROE was explained by the model. The adjusted R-squared was slightly lower at 0.0530. The low R-squared and adjusted R-squared values showed that the model had limited explanatory

power and that most of the variation in ROE remained unexplained, making it clear that other unobserved factors likely played a substantial role in determining ROE.

The coefficient for pre-2021 ESG compliance was -0.0856, implying that firms compliant with ESG guidelines before 2021 were associated with a decrease of 8.56 percentage points in ROE compared to non-compliant firms, holding other factors constant. This finding suggested that early compliance with ESG guidelines could have introduced costs or operational adjustments that initially weighed on financial performance. The p-value of 0.043 was below the conventional 5% significance threshold, indicating statistical significance. Furthermore, the 95% confidence interval for this coefficient, which ranged from -0.1685 to -0.0027, excluded zero, reinforcing the significance of this finding.

Conversely, the coefficient for post-2021 ESG compliance was 0.0155, suggesting a positive association with ROE for firms that adopted ESG compliance after 2021. This indicated a 1.55 percentage point increase in ROE relative to non-compliant firms, holding other variables constant. However, the p-value of 0.790 indicated no statistically significant relationship with ROE. The 95% confidence interval, ranging from -0.0993 to 0.1303, included zero, further confirming the absence of a discernible effect.

The constant term, representing the reference category of always-compliant firms, had a coefficient of -0.738, indicating a baseline ROE of -7.38 percentage points when all independent variables were zero. The p-value of 0.062 suggested that this baseline value was statistically significant, though it had limited interpretive value in this context.

Notably, the firm sector variable exhibited a statistically significant relationship with ROE. With a coefficient of 0.03126, the results suggested that a unit increase in the encoded sector variable corresponded to a 3.126 percentage point increase in ROE. The p-value of 0.011 confirmed significance at the 5% level, and the 95% confidence interval, spanning from 0.0072 to 0.0554, excluded zero, reinforcing the robustness of this effect. This finding highlighted the importance of sectoral differences in shaping financial performance, potentially reflecting varying levels of ESG integration or market conditions across sectors.

Finally, the coefficient for firm size, measured by the log of total assets, was 0.0437, indicating a 4.37% positive effect of firm size on ROE. The p-value of 0.025 suggested that this effect was statistically significant at the 5% level. The 95% confidence interval, which ranged from 0.0056 to 0.0820, did not include zero, further confirming the significance of this variable.

4.4 POST-ESTIMATION TESTS AND RESULTS

After conducting the initial regression analysis, post-estimation tests were performed to assess the adequacy and robustness of the model. These tests help verify whether key statistical assumptions hold and whether any transformations or model adjustments are necessary for improving explanatory power and model fit.

Prior to making the log-transformation on the total assets (firm size variable) the first regression model's F-statistic = 2.74 had a p-value of 0.1610, indicating that the entire model was not statistically significant at both the 5% and the 10% level. This meant that the independent variables did not adequately explain the variation in ROE. The R-squared value of 0.0324 suggested that only 3.24% of the variation in ROE was explained by the independent variables, highlighting a very weak fit. Similarly, the adjusted R-squared, which accounts for the number of predictors, was also low at 0.0138. The root mean squared error (Root MSE) of 0.23161, representing the standard deviation of the residuals and providing an estimate of the average error magnitude in the model. Overall, these results suggested limited explanatory power and poor model fit.

Notably after log-transformation of total assets and re-running the regression model the model came out with an F-statistic of 2.52 and a corresponding p-value of 0.0601 meaning that the model as a whole is marginally significant at the 10% significance. The change in significance after log-transforming total assets suggests that the raw data for total assets may not have been appropriately specified for the model. The log transformation addressed issues such as non-linearity, skewness, and heteroscedasticity, leading to a more appropriate model that produced a significant result. The transformation allowed the model to better capture the relationship between firm size and ROE, leading to a more robust and interpretable result.

4.5 OBJECTIVE CHECKS

4.5.1 Relationship ESG Compliance on the financial performance of listed firms in Kenya

Despite the overall model being statistically significant with a p-value of 0.0601, the regression analysis results indicated that ESG compliance did not have a statistically significant relationship with ROE when controlling for firm size (log-transformed total assets) and firm sector. The coefficient for ESG compliance was -0.0074, with a p-value of 0.873 and a confidence interval of -0.0992 to 0.0843, suggesting no meaningful impact of ESG compliance on ROE within the context of this model. This finding implied that being ESG-compliant did not necessarily enhance or diminish financial performance, as measured by ROE, in the presence of other variables.

Conversely, the control variables revealed significant relationships with ROE. Firm size, represented by log-transformed total assets, had a positive and statistically significant effect on ROE, with a coefficient of 0.0391 and a p-value of 0.049, indicating that larger firms tended to achieve higher ROE. Similarly, firm sector had a positive and significant association with ROE, with a coefficient of 0.0310 and a p-value of 0.010, highlighting the importance of sectoral differences in explaining financial performance. These findings underscored that while ESG compliance alone may not have significantly influenced ROE, firm size and sector played crucial roles in determining financial outcomes.

4.5.2 Difference in the performance of early and late compliers

The regression model was statistically significant overall, as indicated by the F-statistic $F(4,155) = 3.22$ with a p-value of 0.0142. However, the low R-squared value of 0.0768 and adjusted R-squared of 0.0530 suggested that the model explained only a small portion of the variance in ROE. Pre-2021 ESG compliance demonstrated a statistically significant negative association with ROE, with a coefficient of -0.0856 and a p-value of 0.043, suggesting that early compliance may have imposed costs or operational adjustments that negatively impacted financial performance. In contrast, post-2021 ESG compliance did not exhibit a statistically significant relationship with ROE, as indicated by its p-value of 0.790 and a coefficient of 0.0155, showing no discernible effect on ROE. These findings suggested that ESG compliance, based on its timing, had limited explanatory power for ROE.

Among the control variables, firm sector showed a significant positive relationship with ROE, with a coefficient of 0.0313 and a p-value of 0.011, underscoring its importance in explaining variations in financial performance. Firm size, measured by the log of total assets, also exhibited a positive association with ROE, with a coefficient of 0.0438 and a p-value of 0.025, although the effect was relatively modest. These results highlighted sectoral differences and firm size as key determinants of financial performance, while ESG compliance appeared to have played a more limited role in influencing ROE in this model.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND IMPLICATIONS OF THE STUDY

5.1 SUMMARY

The study sought to determine the impact of ESG compliance on the financial performance of listed firms in Kenya. A sample of 20 top-performing firms from the Nairobi Securities Exchange (NSE) was used, with a dataset spanning eight years (2016–2023). The dataset included information on Return on Equity (ROE), total assets, firm sectors, and ESG compliance status for each firm. The analysis addressed two key research questions: the effect of ESG compliance on financial performance and whether there were significant differences between performance of early and late compliers.

The study's objectives were to evaluate the impact of ESG compliance and to determine whether performance differences between compliant and non-compliant firms based on the timing of compliance were significant enough to encourage non-compliant firms to adopt sustainable reporting. To achieve these goals, two multivariate regression models were employed. The first model found no significant relationship between ESG compliance and ROE, with a p-value of 0.873, indicating no association between the two variables. Additionally, the overall model had a low R-squared of 2.79% which suggesting that the independent variables collectively explained very little of the variation in ROE. In the second model, pre-2021 ESG compliance showed a borderline negative effect on ROE, with marginal significance at the 5% level, while post-2021 ESG compliance demonstrated no statistically significant relationship with ROE.

Among the control variables, firm sector and firm size both showed a significantly positive relationship with ROE. This finding suggests that the financial performance of firms in Kenya is more likely influenced by industry-specific factors, market conditions, and other economic or firm-specific variables rather than sustainability practices.

5.2 LIMITATIONS AND CHALLENGES

ESG reporting is a relatively recent practice in the Kenyan market. The NSE introduced its ESG Disclosures Manual in 2021, marking only three years since sustainability reporting was formally recognized as essential. This short timeframe may explain why ESG compliance has yet to significantly impact the financial performance of firms in Kenya, as the practice is still in its infancy. The study utilized a robust dataset, spanning five years before the issuance of the guidelines (2016–2020) and three years after (2021–2023). This timeframe suggests that the limited impact of ESG compliance could be attributed to its recent adoption. It is possible that firms may reap financial benefits from sustained ESG compliance over time, but as of 2024, the study period may be too short to draw definitive conclusions.

The dataset followed a panel data structure, capturing annual observations for all 20 firms from 2016 to 2023 on both dependent and independent variables. While a panel data analysis using a difference-in-differences (DiD) model would have been ideal to assess performance differences, the model consistently omitted the DiD term. This omission arose due to the nature of the ESG compliance dummy variable. The control group comprised firms that were always compliant, with a dummy variable of 1 for all years, while the treatment group included firms that became compliant later. Consequently, for years when treatment firms received a dummy value of 1, they overlapped with the control group, which also consistently had a value of 1. This overlap rendered the DiD interaction term unidentifiable.

In addition, the initial plan for the study was to calculate ESG scores for each firm and simply give non-compliant firms an ESG score of 0 but this was not possible as the annual reports did not have adequate or uniform quantitative data on different ESG disclosures most firms only disclosed the qualitative elements of their compliance and the researcher was not able to privately acquire quantitative data on metrics such as carbon emissions, water consumption from the various firms within the time-frame necessary to conduct the research. Furthermore, there is no fixed methodology for calculating ESG scores since there is no fixed weighting for each component of Environment, Social and Governance as different sectors weight them differently which added another layer of complexity to the initial intention of using ESG scores as a measure of compliance.

As a result, the goal to calculate individual ESG scores was abandoned and compliance was instead represented as a dummy variable.

5.3 CONCLUSION

The first objective of this study was to assess the impact of ESG compliance on the financial performance of listed firms in Kenya. The findings indicated that ESG compliance was not a significant driver of financial performance, with sustainable practices accounting for only a small portion of the variations in financial performance over the years. As of 2024, firms in the Kenyan market have yet to realize tangible financial benefits from sustainable practices. This outcome risks reinforcing the perception that investing in sustainable practices and social initiatives may not be worthwhile, as the associated costs outweigh the financial returns, ultimately having minimal impact on overall performance.

The second objective aimed to establish whether the difference in performance between early and late compliers was significant. The findings revealed only marginal differences: firms that adopted compliance before the release of the guidelines experienced a slight decline in financial performance, while those that complied after the guidelines saw a negligible improvement.

In conclusion, the study found that ESG compliance does not have a substantial impact on the financial performance of listed firms in Kenya. As for the second objective, the study concluded that earlier compliance appeared to have a negative effect on financial performance. However, it is still too early to determine any significant impact from later compliance.

5.4 IMPLICATIONS TO THE WORLD OF KNOWLEDGE

The findings of this study suggest that sustainability reporting and compliance with ESG guidelines have had minimal impact on the financial performance of listed firms in Kenya. For firms that adopted compliance prior to the introduction of the NSE's guidelines, the impact appears to have been slightly negative, likely due to the diversion of resources toward environmental and social initiatives at a time when the market was neither prepared to recognize nor reward such efforts.

Nonetheless, the evidence from this study should not discourage non-compliant firms from adopting sustainable reporting. On the contrary, it is a call to key stakeholders to prioritize sustainable practices within the Kenyan market and direct efforts towards creating mechanisms to reward ESG-compliant firms, in order to incentivize non-compliant companies to follow suit.

5.5 SUGGESTIONS FOR FURTHER RESEARCH

The findings of this research serve as a foundation for future studies aimed at promoting sustainable practices among firms in Kenya. Due to the relatively recent introduction of ESG reporting in the Kenyan market, this study lacks the longitudinal perspective needed to fully assess the long-term effects of ESG compliance on financial performance. Consequently, further research is required to explore these long-term effects. Additionally, future studies should extend beyond publicly listed firms to examine how sustainable practices influence the performance of private enterprises and smaller companies.

This study also highlights the need for further exploration into developing a standardized methodology for calculating ESG scores. While industry-specific variations may be necessary, it is crucial for the region to establish a clear and consistent framework for quantifying ESG performance. Such standardization would enable more reliable research outcomes, improve firm valuations, and support better-informed decision-making for investors.

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